Volunteer Lake Assessment Program Individual Lake Reports

MAY POND, WASHINGTON, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	3,776	**Max. Depth (m):**	7.6	**Flushing Rate (yr^{-1}):**	11.1
Surface Area (Ac.):	149	**Mean Depth (m):**	1.4	**P Retention Coef:**	0.5
Shore Length (m):	5,300	**Volume (m^3):**	905,000	**Elevation (ft):**	1603

TROPHIC CLASSIFICATION

Year	Trophic class
1984	MESOTROPHIC
2004	MESOTROPHIC

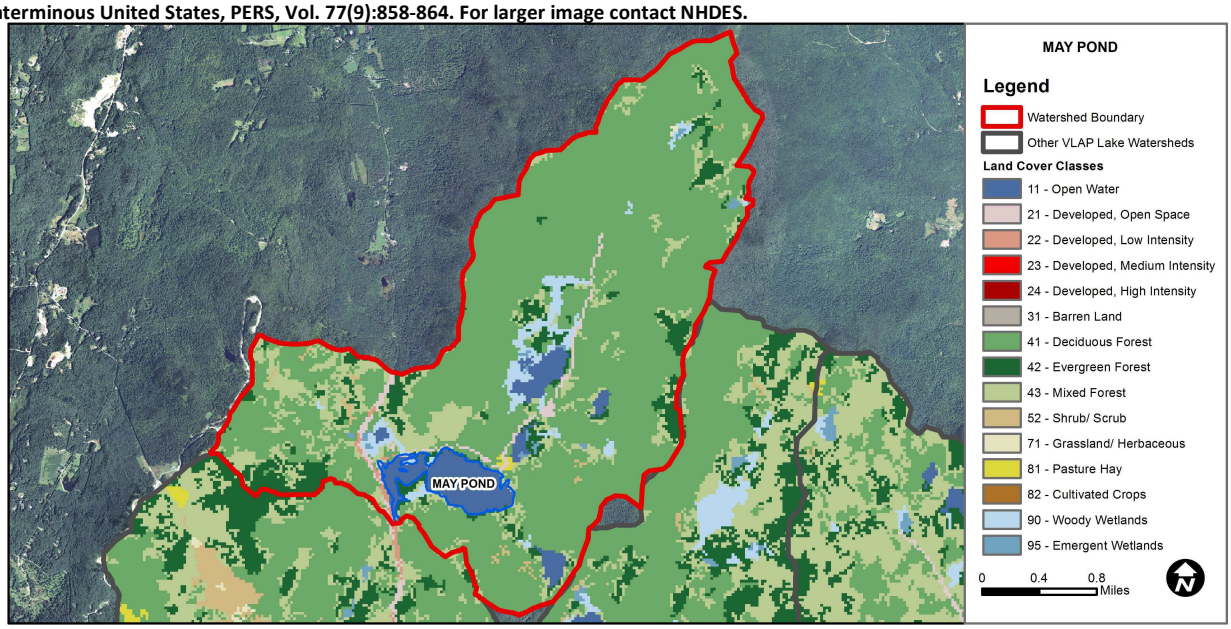
KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Good	>/=5 samples and median is < threshold but > 1/2 threshold value.
	pH	Bad	>10%, with a minimum of 2, samples exceed criteria, with 1 or more by a large margin.
	D.O. (mg/L)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	D.O. (% sat)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	Chlorophyll-a	Good	>/=5 samples and median is < threshold but > 1/2 threshold value.
Primary Contact Recreation	E. coli	Good	Geometric means < criteria; however at least 1 exceedance of the single sample criteria occurred.
	Chlorophyll-a	Very Good	At least 10 samples with 0 exceedances of criteria.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.

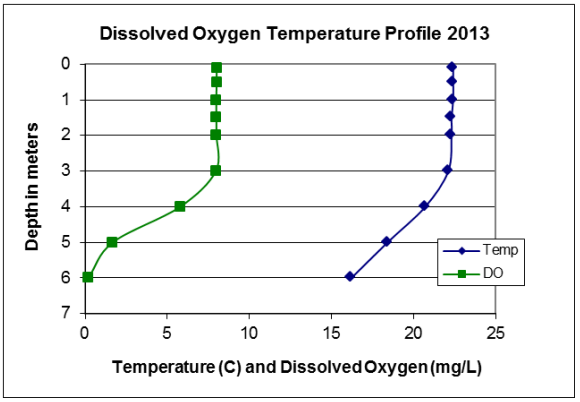


Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	5.69	Barren Land	0	Grassland/Herbaceous	0.04
Developed-Open Space	1.34	Deciduous Forest	70.59	Pasture Hay	0.1
Developed-Low Intensity	0.26	Evergreen Forest	6.74	Cultivated Crops	0
Developed-Medium Intensity	0	Mixed Forest	11.23	Woody Wetlands	2.87
Developed-High Intensity	0	Shrub-Scrub	0.44	Emergent Wetlands	0.4

VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
MAY POND, WASHINGTON, NH
2013 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (*Refer to Table 1 and Historical Deep Spot Data Graphics)*

- **CHLOROPHYLL-A:** Average chlorophyll levels increased in 2013. Chlorophyll levels were elevated in June, likely a result of above average rainfall and stormwater runoff transporting excess nutrients to the pond, however chlorophyll decreased to lower levels in July and August. Visual inspection of the historical data indicates chlorophyll levels have increased slightly since 2010.
- **CONDUCTIVITY/CHLORIDE:** Deep spot and tributary conductivity levels were very low in 2013 and much less than the state median.. Visual inspection of the historical data indicates decreasing (improving) epilimnetic conductivity.
- **TOTAL PHOSPHORUS:** Deep spot phosphorus levels were relatively low throughout the summer. Phosphorus levels in the Butterfield Outlet and Outlet were slightly elevated in June, and in July and August in Vickery Pd. Inlet. Visual inspection of the historical data indicates epilimnetic phosphorus has increased slightly during the period 2007-2013. The June hypolimnion sample had significant sediment contamination and the phosphorus data were invalidated.
- **TRANSPARENCY:** Average transparency was consistent with 2012 and was better than the state median. Visual inspection of the historical data indicates transparency has improved slightly during the period 2007-2013.
- **TURBIDITY:** Deep spot and tributary turbidities were low in 2013. The June hypolimnion sample had significant sediment contamination and the turbidity data were invalidated.
- **PH:** Deep spot and tributary pH levels are lower than desirable range 6.5 – 8.0 units and potentially critical to aquatic life. Visual inspection of the historical data indicates epilimnetic pH has improved during the period 2007-2013.
- **RECOMMENDED ACTIONS:** Epilimnetic phosphorus and deep spot chlorophyll levels, while still in the low range, have increased in recent years. The state has also experienced more high volume, high intensity precipitation events during this period. Efforts should be made to reduce stormwater runoff where possible to prevent sediment erosion and nutrient transport to the pond. Work with Pillsbury State Park staff to potentially install stormwater best management practices at campsites. Utilize DES' "Homeowner's Guide to Stormwater Management" tool.



NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: < 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: 6.5-8.0 (unless naturally occurring)

Table 1. 2013 Average Water Quality Data for MAY POND

Station Name	Alk.	Chlor-a	Cond.	Total P	Trans.		Turb.	pH
	mg/l	ug/l	uS/cm	ug/l	m		ntu	
					NVS	VS		
Butterfield Outlet			12.1	10			0.65	5.77
Epilimnion	0.67	4.55	10.8	8	3.83	3.48	0.74	5.79
Hypolimnion			11.1	9			0.58	5.74
Mill Pd Inlet			11.2	9			0.62	5.82
Outlet			18.7	12			0.65	6.11
Vickery Pd Inlet			19.9	11			0.56	6.21

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation	Parameter	Trend	Explanation
pH	N/A	Ten consecutive years of data necessary for analysis.	Chlorophyll-a	N/A	Ten consecutive years of data necessary for analysis.
Conductivity	N/A	Ten consecutive years of data necessary for analysis.	Transparency	N/A	Ten consecutive years of data necessary for analysis.
			Phosphorus (epilimnion)	N/A	Ten consecutive years of data necessary for analysis.